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BROWDY AND NEIMARK, P.L.L.C.
624 NINTH STREET, NW
SUITE 300
WASHINGTON, DC 20001-5303

EXAMINER
YEH, EUENG NAN

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _07 January 2008_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-20_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

FINAL ACTION

Response to Amendment

1.   The following Office Action is responsive to the amendment and remarks

received on January 7, 2008.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 1-5, 7, 9, 11, 12, 18, and 19 are rejected under 35 U.S.C. 102(b) as being

anticipated by Castor et al. (US 6,246,797 B1).

       Regarding claim 1, Castor discloses a storage space management method

comprising:

a. select a lower priority threshold value (Pu) and an upper priority threshold value (Po), wherein the priority threshold values indirectly indicate how much information content of a file is stored on the storage medium ("… an image can be stored at a number of discrete resolution levels, typically with each resolution level differing from its "neighbors" by a resolution factor of four. In other words, if the highest resolution representation (at resolution level 1) of the image contains X amount of information, the second resolution level representation contains (for example) X/4 amount of information, the third resolution level representation contains X/16 amount of information, and so on …" at column 3, line 18. Thus, each resolution level indicates how much information content of a file is stored on the storage medium and the file with higher resolution means higher quality, the file with lower resolution means lower quality. The relationship between resolution quality, i.e. pixel groups, and the priority is illustrated in figure 5 "For the purposes of this explanation, it will be assumed that the digital camera 100 has four predefined image quality levels: High, Very Good+, Very Good-, and Good. It will be further assumed that image files stored at High quality typically occupy about twice as much space as image files stored at Good quality" at column 8, line 21. Figure 5, second box stored 24 high quality pictures with no space for extra file and the fourth box, after 2nd reduction, stores 24 pictures with VG- quality can still hold extra 12 pictures. Thus, the high resolution quality file is a big file with a great number of pixel groups to reconstruct the image and assigned as lower priority threshold. Similarly, the lower resolution quality file is a smaller file with fewer number of pixel groups to reconstruct the image and assigned as higher priority threshold);

b. storing files in the form of their pixel groups having priority values between the highest priority (P1) and a priority corresponding to the selected lower priority threshold value (Pu) until the available storage space of the storage medium has been filled (as depicted in figure 5, first box stores 21 images have all the illustrated priority values, i.e. quality levels, such as High, VG+, VG-, and G, wherein High is the lower priority threshold value and G is the highest priority. The fourth box in figure 5 shows the result after image quality reduction to create more storage space wherein VG- is the lower priority threshold value and G is the highest priority);

c. increasing the lower priority threshold value (Pu) by one priority level (as depicted in figure 5, box 3, the priority threshold value increases one level, i.e. decreases quality one level, from High to VG+ to make room for extra 7 pictures);

d. deleting pixel groups with a lower priority than that of the current priority threshold value (Pu) on the storage medium when additional storage space is needed on the storage medium to create freed storage space (as depicted in figure 5, box 3, image priority is changed from High, 2nd box, to VG+, 3rd box, when additional storage space is needed on the storage medium in order to create freed storage space for extra 7 pictures);

e. using the freed storage space in the storage medium for storing further data (as depicted in figure 5, boxes 3 and 4 extra spaces are created for storing further data).

Regarding claim 2, steps of repeating, in dependence upon the required storage space, steps b)-e) until the upper priority threshold (Po) is reached (as depicted in figure

5, boxes 3 and 4, the data are deleted one step at a time to create sufficient space to store further pictures until the upper priority threshold is reached. "the quality of the stored images will eventually degrade to some user defined or predefined setting for the lowest allowed quality level, at which point the camera will not store any additional image files until the permitted quality level is lowered further or at least some of the previously stored image files are transferred to another device or otherwise deleted" at column 11, line 48. Wherein the lowest quality level is the corresponding said upper priority threshold).

Regarding claims 3 and 11, the priority threshold values (Po, Pu) are adjustable by the user of the terminal equipment (as depicted in figure 1, "digital camera 100 includes a set of buttons 112 for giving commands ... enable the use to select the quality level of the next picture to be taken ..." at column 4, line 61. "In this example, the user commands the camera to reduce all 'High' quality image files down one quality level to the 'Very Good+' quality level" at column 11, line 16. Thus, the priority threshold values are adjustable by the user).

Regarding claims 4 and 18, the priority threshold values (Po, Pu) are permanently preset by the manufacturer of the terminal equipment ("In another example, the digital camera may be configured to have an automatic image file size reduction mode that is activated only when the camera's memory is full and the user nevertheless presses the image capture button on the camera" at column 11, line 40.

This automatic size adjustment is a feature of the equipment and preset by the manufacture. The size is corresponding to the priority threshold value as discussed in claim 1).

Regarding claims 5, 12, and 19, applied only to certain files selected by the user of the terminal equipment ("…In a first size reduction mode, the user selects one image (or a specified group of images), uses the camera's buttons to indicate what lower quality level the image is to be stored at …" at column 10, line 30).

Regarding claim 7, the data is subdividable into multiple quality classes, wherein for each quality class individual priority threshold values are definable ("In one embodiment the transformed image array 144 (figure 3) is generated by successive applications of a wavelet-like decomposition transform … different sets of coefficients generated by each transform iteration are sometimes called layers. The number of wavelet transform layers generated for an image is typically a function of the resolution of the initial image" at column 6, line 11. Thus, image with wavelet format can have plurality of quality levels or priority threshold values definable).

Regarding claim 9, the files contain image data, video data or audio data (as depicted in figure 1, numeral 100 is "a digital camera system 100 includes an image capture device 102 … for capturing an image as an array of digitally encoded information" at column 3, line 59).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to be
> patented and the prior art are such that the subject matter as a whole would have been obvious
> at the time the invention was made to a person having ordinary skill in the art to which said
> subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

5.   Claims 6, 13, 14, and 20 are rejected under 35 U.S.C. 103(a) as being

unpatentable over the combination of Castor and Zandi et al. (US 5,748,786).

Regarding claims 6, 13, and 20, Castor discussed in claim 1 discloses a

prioritized storage space management system to store more data with lower quality if

necessary.

Castor does not explicitly disclose that the storage system can be multiple partial

storage areas.

Zandi, in the same field of endeavor of data management ("method and

apparatus for lossless and lossy encoding and decoding of data" at column 1, line 8),

teaches a system with plurality of storage areas to handle wavelet transformation "The

context model of the present invention is shown in block diagram form in FIG. 17 ...

Context model 1700 also uses two memories (with memory control logic), a magnitude

memory 1701 and a tree memory 1703. Each of these two memory units may be

implemented with multiple storage areas to allow for alternating use during high speed

operation (i.e., while data is being written into one, the other is being read, or emptied)"
at column 35, line 36.

It would have been obvious at the time the invention was made to one of ordinary
skill in the art to provide the prioritized storage space management system Castor made
with multiple storage areas as taught by Zandi, in order to provide a quick access during
high speed operation.

Regarding claim 14, the data is subdividable into multiple quality classes,
wherein for each quality class individual priority threshold values are definable
(discussed in claim 7).

6.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the
combination of Castor and Milsted et al. (US 6,263,313 B1).

Regarding claim 8, Castor discloses a prioritized storage space management
system to store more data with lower quality if necessary.

Castor does not explicitly disclose that the data file can be an audio file.

Milsted, in the same field of endeavor of electronic commerce ("the secure
delivery and rights management of digital assets" at column 1, line 52), teaches that
audio files can be processed to have various quality levels "… if the content is music,
each of the audio files created during audio processing for the various quality levels of
the full song is packed into separate Content SC(s) 630 *(figure 6)* …" at column 67, line
48.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to enable the prioritized storage space management system Castor made with audio signal processing capability as taught by Milsted, such that the system can not only managing still image file and video data file but also the audio data file.

7.   Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Castor and Atsumi et al. (US 6,801,665 B1)

Regarding claim 10, Castor discloses a prioritized storage space management system to store more data with lower quality if necessary.

Castor does not explicitly disclose that user can specify certain image/data area to be prioritized.

Atsumi, in the same field of endeavor of data management ("transmission or storage where a region of interest (ROI) or certain regions of the image are to be emphasized" at column 2, line 57), teaches that ROI can be defined by user and the degree of compression, i.e. data quality, can also be defined: "FIG. 14 is a flow chart of another method of encoding data in accordance with the present invention ... region of interest in the image is then selected by a user in step 132 ... After a region of interest has been selected in the image, a wavelet transform is then performed ..." at column 27, line 10. Also see "There are several different approaches to determining the degree to which the region of interest will be compressed. One such approach is to let a user select the degree of compression ..." at column 27, line 38.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to enable the prioritized storage space management system Castor made

to allow user to specify region of interest and then prioritize it as taught by Atsumi, such that "the region of interest is reconstructed with a higher fidelity at the low bit rate" at column 5, line 5.

8.   Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Castor and Zandi as applied to claims discussed above and further in view of Milsted.

Regarding claim 15, the pixel groups are formed from digitized scanning values of an audio signal (discussed in claim 8 for the audio signal).

Regarding claim 16, the files contain image data, video data or audio data (discussed in claim 9, the files contain image data, video data or audio data).

9.   Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Castor, Zandi, and Milsted as applied to claims discussed above and further in view of Atsumi.

Regarding claim 17, certain image/data areas, such as faces or texts contained in the image can be changed by the user in their prioritization even subsequently (discussed in claim 10).

Response to Arguments

a. Summary of Applicant's Remark:

The previous claim objections should be withdrawn in view of the amendment.

Examiner's Response:

Examiner agrees, and the previous objections are withdrawn.

b. Summary of Applicant's Remarks:

"There is no teaching or suggestion in Castor for assigning priorities to pixel

groups of the image data and selecting the image quality by a selection of pixel groups

having a priority between a highest selected priority level and a preset lowest priority

threshold level as recited in claim 1" at response page 12, bottom paragraph.

Examiner's Response:

As depicted in Castor figure 5, the sequence based on priority of pixel groups for

extra storage space and image quality such as High, VG+, VG-, and G: "the quality of

the stored images will eventually degrade to some user defined or predefined setting for

the lowest allowed quality level, at which point the camera will not store any additional

image files ..." at column 11, line 48. Refer to the rejections above.

Conclusion

10.   Applicant's amendment is rejected in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eueng-nan Yeh whose telephone number is 571-270-1586. The examiner can normally be reached on Monday-Friday 8AM-4:30PM EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Eueng-nan Yeh
Assistant Patent Examiner
2624

/E.Y./

/Vikkram Bali/

Supervisory Patent Examiner, Art Unit 2624